

Serial No. 09/917,428

Docket No. 10008368-1

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1-17. (Canceled)

18. (Previously Presented) A thin-film fuel cell device, comprising:

a substrate defining a plurality of elongate fuel chambers, with respective elongate fuel chamber openings, connected to one another in series; and

a plurality of elongate fuel cells, including respective anodes and cathodes, secured to the substrate and positioned over respective elongate fuel chamber openings such that the anodes face the elongate fuel chambers and the cathodes are hydraulically isolated from the elongate fuel chambers.

19. (Previously Presented) A thin-film fuel cell device as claimed in claim 18, wherein the substrate comprises a silicon wafer.

20. (Previously Presented) A thin-film fuel cell device as claimed in claim 18, wherein the substrate comprises a portion of a silicon wafer.

21. (Previously Presented) A thin-film fuel cell device as claimed in claim 18, wherein the elongate fuel cells comprise elongate proton exchange membrane fuel cells including a proton conducting electrolyte material between the anodes and cathodes.

22. (Previously Presented) A thin-film fuel cell device as claimed in claim 21, wherein the proton conducting electrolyte material comprises a perfluorinated sulfonic acid polymer having a thickness between 50-100  $\mu$ m.

Serial No. 09/917,428

Docket No. 10008368-1

23-24. (Canceled)

25. (Previously Presented) A thin-film fuel cell device as claimed in claim 18, wherein the plurality of elongate fuel chambers define respective longitudinal ends and are connected to one another at the longitudinal ends.

26. (Previously Presented) An apparatus, comprising:  
a first thin-film fuel cell device including

a first substrate defining a plurality of first elongate fuel chambers, with respective elongate front and back fuel chamber openings, connected to one another in series, and

a plurality of first elongate fuel cells, including respective anodes and cathodes, secured to the first substrate and positioned over respective elongate front fuel chamber openings such that the anodes face the first elongate fuel chambers and the cathodes are hydraulically isolated from the first elongate fuel chambers; and

a second thin-film fuel cell device including

a second substrate defining a plurality of second elongate fuel chambers, with respective elongate front and back fuel chamber openings, connected to one another in series, and

a plurality of second elongate fuel cells, including respective anodes and cathodes, secured to the second substrate and positioned over respective elongate front fuel chamber openings such that the anodes face the second elongate fuel chambers and the cathodes are hydraulically isolated from the second elongate fuel chambers;

wherein the first and second substrates are bonded to one another such that the first and second elongate back fuel chamber openings are aligned with one another.

27. (Previously Presented) An apparatus as claimed in claim 26, wherein at least one of the first and second substrates comprises a silicon wafer.

Serial No. 09/917,428

Docket No. 10008368-1

28. (Previously Presented) An apparatus as claimed in claim 26, wherein at least one of the first and second substrates comprises a portion of a silicon wafer.

29. (Previously Presented) An apparatus as claimed in claim 26, wherein the first and second elongate fuel cells comprise elongate proton exchange membrane fuel cells including a proton conducting electrolyte material between the anodes and cathodes.

30. (Previously Presented) An apparatus as claimed in claim 29, wherein the proton conducting electrolyte material comprises a perfluorinated sulfonic acid polymer having a thickness between 50-100  $\mu$ m.

31. (Previously Presented) An apparatus as claimed in claim 26, wherein the plurality of first elongate fuel chambers define respective longitudinal ends and are connected to one another at the longitudinal ends; and the plurality of second elongate fuel chambers define respective longitudinal ends and are connected to one another at the longitudinal ends.

32-37. (Canceled)